

REMARKS

The Official Action mailed April 23, 2007, has been received and its contents carefully noted. This response is filed within three months of the mailing date of the Official Action and therefore is believed to be timely without extension of time. Accordingly, the Applicant respectfully submits that this response is being timely filed.

The Applicant notes with appreciation the consideration of the Information Disclosure Statements filed on September 16, 2005; December 20, 2005; and May 23, 2006.

Claims 1-8 were pending in the present application prior to the above amendment. The features of dependent claim 2 have been incorporated into independent claim 1. Also, claim 1 has been amended to recite additional features. Claims 2, 7 and 8 have been canceled without prejudice or disclaimer. Claims 3, 4 and 6 have been amended to depend from claim 1. Accordingly, claims 1 and 3-6 are now pending in the present application, of which claim 1 is independent. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Paragraph 1 of the Official Action objects to informalities at pages 28 and 29. In response, the specification has amended in accordance with the Examiner's suggestions. That is, "Step 3" has been changed to "Step S3" and "Step 6" has been changed to "Step S6." Also, a similar informality has been corrected at page 28, line 27 ("Step 4" has been changed to "Step S4"). Reconsideration and withdrawal of the objections are requested.

Paragraph 2 of the Official Action rejects claim 8 under 35 U.S.C. §101. In response, claim 8 has been canceled without prejudice or disclaimer; therefore, the rejection is moot.

Paragraph 4 of the Official Action rejects claims 1, 6/1, 7 and 8 as anticipated by U.S. Patent No. 6,889,186 to Michaelis. The Applicant respectfully submits that an

anticipation rejection cannot be maintained against the independent claims of the present application, as amended.

As stated in MPEP § 2131, to establish an anticipation rejection, each and every element as set forth in the claim must be described either expressly or inherently in a single prior art reference. Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Independent claim 1 already recites a pitch component extraction means which acquires a speech signal (waveform and pitch component) and has been amended to recite a new feature, i.e. delay means for delaying the speech signal, which is supported in the present specification, for example, by delay means 6.

Also, claim 1 has been amended to incorporate the features of dependent claims 2, i.e. the pitch component extraction means comprises: a variable filter which varies the pass band thereof according to a control and filters the speech signal to thereby extract components within the pass band; and a filter characteristic determination section which, to cause the variable filter to extract the pitch component, identifies the fundamental frequency of the speech based on the speech signal and controls the variable filter so that the filter has a pass band in which components other than the identified fundamental frequency and vicinity thereof are cut off.

Further, claim 1 has been amended to recite a new feature, i.e. where the delay means delays the speech signal at least by a delay corresponding to the possible maximum time length taken up by a consonant immediately before a vowel, which are supported in the present specification, for example, by page 18, lines 7-8.

The delay taught by Michaelis overcomes a problem where a starting part of speech is paused or broken off. In contrast, the delay according to the present invention overcomes a problem where, when a consonant associated with a vowel does not include pitch components over a certain level, the consonant is removed. To this end, the present invention comprises a combination of a delay means and a pitch

component extraction means so that the consonant is not removed by appropriately removing noise mixed into the speech.

The Applicant respectfully submits that Michaelis does not teach the combination of a pitch component extraction means which acquires a speech signal (waveform and pitch component); and delay means for delaying the speech signal, where the pitch component extraction means comprises: a variable filter which varies the pass band thereof according to a control and filters the speech signal to thereby extract components within the pass band; and a filter characteristic determination section which, to cause the variable filter to extract the pitch component, identifies the fundamental frequency of the speech based on the speech signal and controls the variable filter so that the filter has a pass band in which components other than the identified fundamental frequency and vicinity thereof are cut off, and where the delay means delays the speech signal at least by a delay corresponding to the possible maximum time length taken up by a consonant immediately before a vowel, either explicitly or inherently.

Since Michaelis does not teach all the elements of the independent claims, either explicitly or inherently, an anticipation rejection cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 102 are in order and respectfully requested.

Paragraph 6 of the Official Action rejects dependent claims 2-4 and 6/2-4 as obvious based on the combination of Michaelis and U.S. Patent No. 7,043,424 to Chen. Paragraph 7 of the Official Action rejects dependent claims 5 and 6/5 as obvious based on the combination of Michaelis, Chen and U.S. Patent No. 4,627,102 to Nott. The Applicant respectfully submits that a *prima facie* case of obviousness cannot be maintained against the independent claims of the present application, as amended.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available

to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims, as amended. Please incorporate the arguments above with respect to the deficiencies in Michaelis. Chen and Nott do not cure the deficiencies in Michaelis. The Official Action relies on Chen and Nott to teach the features of dependent claims (pages 5-10, Paper No. 20070416). Although the Official Action asserts that Chen teaches a variable filter and a filter characteristic determination section (pages 5-7, Id.), which is now incorporated into independent claim 1, the Applicant respectfully submits that Michaelis, Chen and Nott, either alone or in combination, do not teach or suggest the combination of a pitch component extraction means which acquires a speech signal (waveform and pitch component); and delay means for delaying the speech signal, where the pitch component extraction means comprises: a variable filter which varies the pass band thereof according to a control and filters the speech signal to thereby extract components within the pass band; and a filter characteristic determination section which, to cause the variable filter to extract the pitch component, identifies the fundamental frequency of the speech based on the

speech signal and controls the variable filter so that the filter has a pass band in which components other than the identified fundamental frequency and vicinity thereof are cut off, and where the delay means delays the speech signal at least by a delay corresponding to the possible maximum time length taken up by a consonant immediately before a vowel.

Since Michaelis, Chen and Nott do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



Robert L. Pilaud
Reg. No. 53,470

Robinson Intellectual Property Law Office, P.C.
PMB 955
21010 Southbank Street
Potomac Falls, Virginia 20165
(571) 434-6789